

REMARKS

Claims 1 through 32 are pending in the Application. Claims 1, 8, 14, 20, 24 and 29 are amended herein.

Claim Rejections under 35 U.S.C. §102(e)

The Office Action issued rejected claims 1-5, 7-12, 14-17, 19-22, 24-26, 28-31 and 33 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,631,416 to Bendinelli et al. (the Bendinelli reference). Applicants respectfully traverse the rejection of these claims under 35 U.S.C. §102(e) because the references applied to the claims fail to disclose each element of the claims, as explained below. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. . . . The identical invention must be shown in as complete detail as contained in the claim. M.P.E.P. 2131.

The Office Action states that “Applicant’s invention broadcasts TCP response replies on an alternate wireless channel to avoid congestion.” This statement does not reflect aspects of the embodiments described in the specification and the claims. As stated in paragraphs 9-11 of the specification, a wireless transceiver (e.g., the client station) is required to occasionally scan the available channels to see whether there are other nodes with which to communicate (i.e., other channels are supporting data of interest to the wireless communication device). Because of the nature of wireless networks, the scanning process requires that the station to temporarily leave the channel that is supporting a current communication by tuning and listening to one or more different channels to determine if there is any interest in association with one of these other channels. A significant period of time is required to make such a determination for each channel. In many wireless local area networks (WLAN), multiple frequencies and/or network interface protocols may be used (e.g., IEEE 802.11b, IEEE 802.11a, and/or IEEE 802.11g protocols), which increases the number of channels that must be scanned and correspondingly increases the time it takes to scan all of the channels. While the time it takes to scan multiple channels over multiple network interface protocols, the data throughput performance impact on the station is modest. However, the data throughput for higher layer protocols, such as Transmission Control

Protocol/Internet Protocol (TCP/IP) may be significantly impacted. Such a significant impact results because TCP/IP measures the time that expires from when a source sends a packet to a destination until the source receives an acknowledgement (ACK) from the destination that it received the packet. If the time is greater than expected (e.g., a few hundred milliseconds plus some tolerance that accounts for reasonable transmission time variations), TCP/IP may interpret this as congestion (i.e., the network infrastructure is overworked and is slow in transferring packets). If the station is scanning other channels for a significant period of time (e.g., a few hundred milliseconds), TCP/IP may view this absence of support as congestion and evoke the multiplicative decrease congestion avoidance algorithm. As such, the TCP/IP throughput is unnecessarily reduced.

The embodiments of the invention address this problem. In one embodiment, a scan channel request is received of a plurality of channels that are in accordance with the network interface protocol. For example, the channels may be in accordance with IEEE 802.11a, IEEE 802.11b, and/or IEEE 802.11g or other protocol. The method then continues by determining whether an Internet packet is being received via one of the plurality of channels when the channel scan request is received (i.e., is a higher layer protocol supporting a current transmission). If so, the method continues by scanning at least one channel of the plurality of channels, but does not scan all of the plurality of channels at one time. The method continues after the scanning by tuning to the channel supporting the higher layer protocol communication to transmit at least one outbound Internet packet. The method then continues by scanning at least another channel of the plurality of channels.

Independent Claim 1 and Dependent Claims 2 through 7

The Office Action has failed to show that the Bendinelli reference discloses the elements, *inter alia*, of claim 1 of, “when the Internet packet is being received when the channel scan request is received, wherein each of the plurality of channels have a different associated radio frequency (RF) signal; scanning at least one other channel of the plurality of channels, but less than all of the plurality of channels; after scanning the at least one other channel, tuning to the one of the plurality of channels and transmitting at least one outbound Internet packet; and scanning at least another channel of the plurality of channels.”

The Office Action cites column 17, lines 21 through 36 and column 20, lines 10 through 13 and lines 43 through 47 of the Bendinelli reference as disclosing elements of claim 1. However, these citations of the Bendinelli reference fail to disclose the elements of claim 1. The Bendinelli reference with respect to Figure 1, states at column 17, lines 9 through 36:

“In one embodiment, a user may serve as an administrator and may register at least one of the gateways 150-153 through control system 175 and/or establish one or more virtual private networks over communication channel 120. The user may use an Internet browser on computer 101 to contact the control system 175, to register at least one of the gateways 150-153, and/or establish one or more virtual private networks over communication channel 120. Moreover, although the computer 101 is shown as a stand-alone entity in the embodiment of FIG. 1, the computer 101 may alternatively be co-located with one or more of the gateways 150-153, the control system 170, and/or the communication channel 120.

Furthermore, the user may register with the control system 175 and provide basic information, such as the number of gateways participating in the virtual private network and billing information. Once registered, the user may receive code generated by the control system 175. The user may then reboot a computer with the received code to configure the computer as a gateway. That is, the administrator may install the code on any computer that the administrator desires to configure as a gateway including the computer serving as the computer 101. The configured gateway may then establish a tunnel to another gateway (i.e., similarly configured by the control system 175) after the control system 175 determines that each gateway mutually consents to enabling the tunnel and provides each gateway with sufficient information to enable the tunnel.”

Thus, the Bendinelli reference discloses only establishing one or more virtual private networks over a communication channel 120. There is no discussion of scanning a plurality of channels or determining whether a packet is being received by a channel or scanning at least one but less

than all of the channels and tuning to the one of the channels to transmit the packet. Furthermore, the Bendinelli reference states at column 20, lines 10 through 13:

“Moreover, the control system 175 may also monitor the status and performance of the tunnels established through the communication channel 120 (step 550).”

And the Bendinelli reference states at column 20, lines 30 through 47:

“In the embodiment of FIG. 6A, the network operations center 610 may determine a virtual address for each gateway desiring to participate in one or more virtual private networks established through a base network, such as the Internet 620. Consequently, each gateway may be provided two addresses--a real or public address and a virtual address. The virtual address, which may be in an IP format, may be used by the gateways to establish one or more tunnels with each other through a base network, such as the Internet 620 and may be routable only through the established tunnels. This virtualized addressing may provide virtual connectivity through the Internet 620 and may allow routing of virtual addresses from one address to another. Moreover, this virtualized addressing may facilitate network address translation, port address translation, IP masquerade, and/or IP connection sharing during the process of routing as well as during the dynamic assignment of addresses.”

The Bendinelli reference is only describing monitoring of VPN tunnels and determining a virtual address for each gateway desiring to participate in one or more VPNs. Again, there is no relation or disclosure of the elements of claim 1 of, “when the Internet packet is being received when the channel scan request is received, wherein each of the plurality of channels have a different associated radio frequency (RF) signal; scanning at least one other channel of the plurality of channels, but less than all of the plurality of channels; after scanning the at least one other channel, tuning to the one of the plurality of channels and transmitting at least one outbound Internet packet; and scanning at least another channel of the plurality of channels.”

The dependent claims 2 through 7 add further patentable matter to Claim 1 and thus are further differentiated and patentable under 35 U.S.C. §102 over the Bendinelli reference.

Independent Claim 8 and Dependent Claims 9 through 13

The Office Action has failed to show that the Bendinelli reference discloses the elements, *inter alia*, of claim 8 of, “when a Transmission Control Protocol (TCP) connection is established between a source and a destination, receiving a network interface protocol channel scan request; and when the network interface protocol channel scan request is received, hopping between a channel supporting the TCP connection within a wireless local area network (WLAN) having an associated radio frequency (RF) signal and other channels of the WLAN having other associated RF signals and transmitting on the channel supporting the TCP connection to avoid excess latency in acknowledging receipt of a packet formatted in accordance with the Internet Protocol or a portion of the packet during scanning of the other channels of the WLAN.”

The Office Action cites column 17, lines 21 through 36 and column 20, lines 10 through 13 and lines 43 through 47 of the Bendinelli reference as disclosing elements of claim 8. However, these citations of the Bendinelli reference disclose establishing one or more virtual private networks over a communication channel 120, monitoring of VPN tunnels and determining a virtual address for each gateway desiring to participate in one or more VPNs. Again, there is no relation to the elements of claim 8. The dependent claims 9 through 13 add further patentable matter to Claim 8 and thus are further differentiated and patentable under 35 U.S.C. 35 U.S.C. §102 over the Bendinelli reference.

Independent Claim 14 and Dependent Claims 15 through 19

The Office Action has failed to show that the Bendinelli reference discloses the elements, *inter alia*, of claim 14 of, “memory operably coupled to the processing module, wherein the memory stores operational instructions that cause the processing module to: process data in accordance with an utility application to produce a message; process the message in accordance with a transport application to produce a packet; process the packet in accordance with an Internet Protocol to produce at least one of the datagram; generate a channel scan request in accordance with the transport application; determine whether one of the datagrams is being received when the channel scan request is generated; when the one of the datagrams is being received when the channel scan request is received, scan at least one other channel of the plurality of channels, but less than all of the plurality of channels; after scanning the at least one

other channel, tune to the one of the plurality of channels and transmitting at least one outbound datagram; and scanning at least another channel of the plurality of channels.”

The Office Action cites column 17, lines 21 through 36 and column 20, lines 10 through 13 and lines 43 through 47 of the Bendinelli reference as disclosing elements of claim 14. However, these citations of the Bendinelli reference disclose establishing one or more virtual private networks over a communication channel 120, monitoring of VPN tunnels and determining a virtual address for each gateway desiring to participate in one or more VPNs. Again, there is no relation to the elements of claim 14. The dependent claims 15 through 19 add further patentable matter to Claim 14 and thus are further differentiated and patentable under 35 U.S.C. §102 over the Bendinelli reference.

Independent Claim 20 and Dependent Claims 21 through 23

The Office Action has failed to show that the Bendinelli reference discloses the elements, *inter alia*, of claim 20 of, “memory operably coupled to the processing module, wherein the memory stores operational instructions that cause the processing module to: process data in accordance with an utility application to produce a message; process the message in accordance with a transport application to produce a packet; process the packet in accordance with an Internet Protocol to produce at least one of the datagram; generate a channel scan request in accordance with the transport application; determine whether one of the datagrams is being received when the channel scan request is generated; when the one of the datagrams is being received when the channel scan request is received, scan at least one other channel of the plurality of channels, but less than all of the plurality of channels; after scanning the at least one other channel, tune to the one of the plurality of channels and transmitting at least one outbound datagram; and scanning at least another channel of the plurality of channels.”

The Office Action cites column 17, lines 21 through 36 and column 20, lines 10 through 13 and lines 43 through 47 of the Bendinelli reference as disclosing elements of claim 20. However, these citations of the Bendinelli reference disclose establishing one or more virtual private networks over a communication channel 120, monitoring of VPN tunnels and determining a virtual address for each gateway desiring to participate in one or more VPNs. Again, there is no relation to the elements of claim 20. The dependent claims 21 through 23 add

further patentable matter to Claim 20 and thus are further differentiated and patentable under 35 U.S.C. §102 over the Bendinelli reference.

Independent Claim 24 and dependent Claims 25 through 28

The Office Action has failed to show that the Bendinelli reference discloses the elements, *inter alia*, of claim 24 of, “memory operably coupled to the processing module, wherein the memory stores operational instructions that cause the processing module to: receive a channel scan request in accordance with a transport application; determine whether one of the datagrams is being received by one of a plurality of channels when the channel scan request is generated, wherein each of the plurality of channels has an associated radio frequency (RF) signal; when the one of the datagrams is being received when the channel scan request is received, scan at least one other channel of the plurality of channels, but less than all of the plurality of channels; after scanning the at least one other channel, tune to the one of the plurality of channels and transmitting at least one outbound datagram; and scanning at least another channel of the plurality of channels.”

The Office Action cites column 17, lines 21 through 36 and column 20, lines 10 through 13 and lines 43 through 47 of the Bendinelli reference as disclosing elements of claim 24. However, these citations of the Bendinelli reference disclose establishing one or more virtual private networks over a communication channel 120, monitoring of VPN tunnels and determining a virtual address for each gateway desiring to participate in one or more VPNs. Again, there is no relation to the elements of claim 24. The dependent claims 25 through 28 add further patentable matter to Claim 20 and thus are further differentiated and patentable under 35 U.S.C. §102 over the Bendinelli reference.

Independent Claim 29 and dependent Claims 30 through 32

The Office Action has failed to show that the Bendinelli reference discloses the elements, *inter alia*, of claim 29 of, “memory operably coupled to the processing module, wherein the memory stores operational instructions that cause the processing module to: when a Transmission Control Protocol (TCP) connection is established between a source and a destination, receive a network interface protocol channel scan request; and when the network interface protocol channel scan request is received, hop between a channel having a first radio

frequency supporting the TCP connection within a wireless local area network (WLAN) and other channels of the WLAN having other radio frequencies and transmitting on the channel supporting the TCP connection to avoid excess latency in acknowledging receipt of a datagram of the at least one datagrams or a portion of the datagram during scanning of the other channels of the WLAN.”

The Office Action cites column 17, lines 21 through 36 and column 20, lines 10 through 13 and lines 43 through 47 of the Bendinelli reference as disclosing elements of claim 29. However, these citations of the Bendinelli reference disclose establishing one or more virtual private networks over a communication channel 120, monitoring of VPN tunnels and determining a virtual address for each gateway desiring to participate in one or more VPNs. Again, there is no relation to the elements of claim 29. The dependent claims 30 through 32 add further patentable matter to Claim 29 and thus are further differentiated and patentable under 35 U.S.C. §102 over the Bendinelli reference.

CONCLUSION

For the above reasons, the foregoing response places the Application in condition for allowance. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 240-5324.

Respectfully submitted,
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Dated: June 30, 2008

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